Stated Meeting, June 18, 1869.

Present, ten members.

Mr. FRALEY, Vice-President, in the Chair.

A letter accepting membership was received from Professor Rolliston, University Oxford, England. May 29.

Letters of invoice were received from the Imperial Geog. Society of Russia, May 15; U. S. Nav. Obs. May 19th; Cincinnati Obs. May; and A. M. Mayer, of Bethlehem, May 26.

Letters of acknowledgment were received from the Imperial Geographical Society of Russia. The Cincinnati Observatory requested the completion of its imperfect set of the Proceedings.

The Meteorological Office reported its change of address to No. 116 Victoria street, London, S. W.

Donations for the Library were received from the Paris Geographical Society and School of Mines, the London Astronomical Society, Prof. Rolliston, of Oxford, the Bath Society, W. T. Blanford, the Boston N. H. Society, the Rhode Island Society for En. Dom. Industry, Franklin Institute, College of Pharmacy, Medical News, Philadelphia University, West Penn Academy, Prof. Mayer, Prof. Ennis, Provost C. J. Stille, the U. S. Sanitory Commission, Naval Observatory, Census Bureau, R. W. Rossiter, Wilmington Institute, and St. Louis Public School Commissioners.

Mr. Cope made a communication concerning a discovery of certain fossil remains found in New Jersey, the structure of which indicated a connection between the bird and reptile classes, and described the peculiarities of construction presented by the fossil referred to. He also exhibited fossil remains of the Plesiosaurus and Mososaurus orders or types, and described their relation to other genera of similar type.

The fossil which Prof. Cope exhibited was the almost perfect cranium of a Mosasauroid reptile, the Clidastes propython. He explained various peculiarities of its structure, as the moveable articulation of certain of the mandibular pieces on each other, the suspension of the os-quadratum at the extremity of a cylinder composed of the opisthotic, &c., and other peculiarities. He also explained, from specimens, the characters of a large new Plesiosauroid from Kansas, discovered by Wm. E. Webb, of Topeka, which possessed deeply biconcave vertebrae, and anchylosed veural arches, with the zygapophyses directed after the manner usual among vertebrates. The former was thus shown to belong to the true Sauropterygia, and not to the Streptosauria, of which Elasmosarus was type. Several distal caudals were anchylosed, without chevron bones, and of depressed form, while proximal caudals had anchylosed diapophyses and distinct chevron bones. The form was regarded as new, and called Polycotylus latipinnis, from the great relative stoutness of the paddle.

He also gave an account of the discovery, by Dr. Samuel Lockwood, of Keyport, of a fragment of a large Dinasaur, in the clay which underlies immediately the clay marls below the lower green sand bed in Monmouth County, N. J. The piece was the extremities of the tibia and fibula, with astragalo-calcaneum anchylosed to the former, in length about sixteen inches; distal width fourteen. The confluence of the first series of tarsal bones with each other, and with the tibia, he regarded as a most interesting peculiarity, and one only met with elsewhere in the reptile Compsognathus and in birds. He therefore referred the animal to the order Symphypoda, near to Compsognathus Wagn. The extremity of the fibula was free from, and received into a cavity of the astragalo-calcaneum, and demonstrated what the speaker had already asserted, that the fibula of Ignanodon and Hadrosaurus had been inverted by their describers. The medullary cavity was filled with open cancellous tissue. The species, which was one half larger than the type specimen of Hadrosaurus foulkii, he named Ornithotarsus immanis.

Dr. H. C. Wood spoke of his investigations with regard to the Fresh Water Algæ of Eastern North America.

Pending nominations, Nos. 628 to 638, new nominations, Nos. 638 to 640, were read.

Dr. H. Allen offered and read a paper "On Human Osteology, containing the heads of divisions of a more extended communication, which he proposes to present at a future time.

The following observations have been instituted with the object of testing the value of the following propositions:

I.

That a true conception of the skeleton can be only secured by studying embryology and osteology conjointly.

For inasmuch as the skeleton is the frame-work adapted to protect internal organs, and to afford attachments to ligaments and muscles, and since the osseous particles (centres of ossification, either free or combined) are the results of forces acting in obedience to the necessities of organs to be protected and of trunks to be moved, it follows that bones can be best studied when understanding the requirements calling them into existence.

II.

That the "centre of ossification" is the osteological unit.

For since "the bones" are associations of centres of ossification having little or no determinate value, it is rational to prefer these centres as the primal forms, before the more or less arbitrary ones, the results of their combination.

III.

That the causes of variation of the forms of "bones" within the limits of health are to be found in the muscles placed in association with them.

Since the idea of a limb is progression, the bones stand up as fulcra and levers to the power, we find the degree of power holds a direct ratio to the strength of lever and amount of weight. Hence, bones of limbs correspond in point of strength and size to the muscles associated with them. Habit is thus seen to be indirectly the chief cause of the variation of ossific forms.

IV.

That the causes of localization of diseased action are best determined by the application of the foregoing propositions.

(1.) A number of centres of ossification coalescing to protect a given viscus, the resultant form may preserve, throughout life, a physiological as well as a mechanical unity. Example: The centres composing the brain case. When, however, the centres of ossification in the bones of limbs unite, while losing their identity in form they maintain a peculiar independence of action throughout life. Example: The centre composing the femur and tibia.

(2.) The evidences of retrograde activity (atrophy) are most marked along the lines of progressive activity (growth.)

(3.) Activity of development is accompanied with vascularity. Increased vascularity is an exciting cause to morbid action. Therefore it follows that diseased action may be often found in association with an incomplete genetic process.

(4.) Since muscles control the normal shapes of bones during harmonious action, their inharmonious action may prove a cause of deformity.

(5.) Continual excitation of points of connection of muscles with bones may prove an exciting cause to disease within such areas.

The Society was then adjourned.